

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

POWER INTEGRATIONS, INC.,)	REDACTED
)	PUBLIC VERSION
Plaintiff,)	
)	
v.)	C.A. No. 04-1371-JJF
)	
FAIRCHILD SEMICONDUCTOR)	
INTERNATIONAL, INC., and FAIRCHILD)	
SEMICONDUCTOR CORPORATION,)	
)	
Defendants.)	

**DEFENDANTS FAIRCHILD SEMICONDUCTOR INTERNATIONAL, INC. AND
FAIRCHILD SEMICONDUCTOR CORPORATION'S REPLY POST-TRIAL
BRIEF IN SUPPORT OF THEIR ASSERTION THAT THE PATENTS-IN-SUIT
ARE UNENFORCEABLE DUE TO INEQUITABLE CONDUCT**

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TABLE OF CONTENTS

	Page
I. INTRODUCTION.....	1
II. INTEGRATIONS’ ‘075 PATENT IS UNENFORCEABLE.....	2
III. POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE ‘851 PATENT.....	7
A. Power Integrations Made A Material Misrepresentation and Withheld Material Prior Art.....	8
1. The withheld prior art was not cumulative.....	9
2. Power Integrations’ litigation arguments are irrelevant.....	10
B. Power Integrations’ Inequitable Conduct Was Intentional.....	11
C. The ‘851 Patent Is Unenforceable Due to Power Integrations Inequitable Conduct.....	13
IV. POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE ‘366 PATENT.....	14
A. Power Integrations Withheld Material Prior Art During the Prosecution of the ‘366 Patent.....	14
1. Power Integrations’ prior art SMP240/260 are highly material.....	14
2. Power Integrations prior art SMP3 is highly material.....	16
B. Power Integrations Intentionally Withheld Material Prior Art.....	16
V. POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE ‘876 PATENT.....	17
VI. CONCLUSION.....	20

TABLE OF AUTHORITIES

Page

FEDERAL CASES

<i>Baxter Int'l, Inc. v. McGaw, Inc.</i> , 149 F.3d 1321 (Fed. Cir. 1998).....	13
<i>Cargill, Inc. v. Canbra Foods, Ltd.</i> , 476 F.3d 1359 (Fed. Cir. 2007).....	<i>passim</i>
<i>Critikon, Inc. v. Becton Dickinson Vascular Access, Inc.</i> , 120 F.3d 1253 (Fed. Cir. 1997).....	12
<i>Digital Control, Inc. v. Charles Machine Works</i> , 437 F.3d 1309 (Fed. Cir. 2006).....	3, 13
<i>Ferring B.V. v. Barr Laboratories, Inc.</i> , 437 F.3d 1181 (Fed. Cir. 2006).....	12
<i>Flex-Rest, LLC v. Steelcase, Inc.</i> , 455 F.3d 1351 (Fed. Cir. 2006).....	12
<i>Hoffman-La-Roche v. Promega Corp.</i> , 323 F.3d 1354 (Fed. Cir. 2003).....	13
<i>Kingsdown Medical Consultant, Ltd. v. Hollister, Inc.</i> , 863 F.2d 867 (Fed. Cir. 1988).....	13, 18
<i>KSR Int'l Co. v. Teleflex Inc.</i> , 127 S.Ct. 1727, 1740 (2007).....	4
<i>LaBounty Manufacturing v. U.S. Int'l Trade Comm'n</i> , 958 F.2d 1066 (Fed. Cir. 1992).....	2, 3
<i>Lummus Industries, Inc. v. D.M. & E. Corp.</i> , 862 F.2d 267 (Fed. Cir. 1988).....	9
<i>Procter & Gamble Co. v. Kimberly-Clark Corp.</i> , 12 U.S.P.Q. 2d 1577 (D. S.C. 1989).....	3

FEDERAL STATUTES

35 U.S.C. § 102(a)	18, 19
37 C.F.R. § 1.56	13, 15, 17

I. **INTRODUCTION.**

In its Opening Post-Trial Brief, Fairchild set forth clear and objective evidence that Power Integrations committed inequitable conduct in prosecuting each of the patents in suit. The evidence shows that Power Integrations' inventors withheld material prior art from the Patent Office that Power Integrations does not dispute was in its inventors' possession. Power Integrations was so determined to obtain patents that it also made objectively false, material misrepresentations. In short, the evidence proves that Power Integrations committed fraud on the Patent Office and its patents should be held unenforceable.

Power Integrations failed to disclose any prior art references during the entire prosecution of the '075 Patent. This failure is egregious since Dr. Eklund's own contemporaneous documents prove he personally conducted a prior art search and found and withheld 12 relevant references. Critically, one such withheld reference discloses the PTO/extended drain combination that Power Integrations now alleges is "the heart" of Dr. Eklund's invention.

Likewise, Mr. Balakrishnan admitted that during the prosecution of Power Integrations' circuit patents he understood his obligation to produce prior art. Mr. Balakrishnan testified that he reviewed Power Integrations' earlier products as potential prior art for his patents. Despite this, neither Mr. Balakrishnan nor the other applicants disclosed any of Power Integrations' prior art devices during prosecution of any of the circuit patents. The objective evidence – including the Patent Office's decision to reexamine the patents once it was provided with this prior art – proves that this prior art was highly material.

The evidence also proves Power Integrations' deceptive intent regarding the prior art it withheld. Power Integrations went so far as to deliberately mislead the Examiner by stating that the prior art did not "disclose, teach, or suggest" limitations that Power Integrations knew were present in its own prior art SMP211 devices. Power Integrations could only make this argument by withholding all substantive information about its SMP211.

Confronted with this contemporaneous and objective evidence from its own inventors and documents, Power Integrations is forced to rely upon unsubstantiated attorney argument to

suggest that its applicants did not intend to commit inequitable conduct. Power Integrations' decade later litigation inspired arguments cannot preclude a finding of inequitable conduct.

II. INTEGRATIONS' '075 PATENT IS UNENFORCEABLE.

Fairchild set forth detailed, objective evidence that Dr. Eklund committed inequitable conduct by making misleading statements and withholding material prior art during prosecution of the '075 Patent. Power Integrations does not dispute the following basic facts:

- (i) Dr. Eklund performed a prior art search in 1984 for the '075 Patent, but failed to disclose to the Patent Office any of the 12 prior art references he found.
- (ii) Dr. Eklund distinguished over the prior art cited by the Examiner by emphasizing the "surface adjoining" P-TOP and extended drain structures. Yet, at the same time, he withheld from the Examiner the Ludikhuize article containing a substantially similar P-TOP/extended drain combination.
- (iii) At least four other prior art references found in Dr. Eklund's prior art search contained *exactly* the claimed extended drain structure relied upon by Dr. Eklund to overcome the Examiner's rejections.

A. The Prior Art Withheld By Dr. Eklund Was Highly Material

Power Integrations cannot avoid the fundamental issue that the Ludikhuize article refers to both the extended drain and P-TOP in combination. [FF105-136]

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Dr. Eklund distinguished over the Colak prior art found by the Examiner by claiming that the p-layer was "was not surface adjoining." [FF138-146] Power Integration now admits that the P-TOP is "surface adjoining" in the withheld Ludikhuize article. [FF111-121] Thus, Dr. Eklund withheld highly material prior art that would have significantly affected the prosecution of the '075 Patent. The Federal Circuit has repeatedly found this type of behavior to constitute inequitable conduct. *See Cargill, Inc. v. Canbra Foods, Ltd.*, 476 F.3d 1359, 1363-1372 (Fed. Cir. 2007); *LaBounty Manufacturing v. U.S. Int'l Trade Comm'n*, 958 F.2d 1066, 1070-1076 (Fed. Cir. 1992).

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The fact that the withheld prior art included the same key elements that Dr. Eklund was emphasizing to overcome the cited prior art establishes that it was highly material. *See Cargill, Inc.*, 476 F.3d at 1366 (where the examiner raises the importance of a specific point of novelty, any information related to that point of novelty is material); *Procter & Gamble Co. v. Kimberly-Clark Corp.*, 12 U.S.P.Q.2d 1577, 1594 (D. S.C. 1989) (“[T]he court cannot imagine a more material representation than a declaration submitted specifically to overcome a prior art rejection); 37 C.F.R. §1.56 (information is material where “It refutes, or is inconsistent with, a position the applicant takes in: (i) Opposing an argument of unpatentability relied on by the Office, or (ii) Asserting an argument of patentability.”). In its brief, Power Integrations does not dispute that the Ludikhuize article teaches a surface-adjointing P-TOP and an extended drain extending each way from the drain pocket. The *only* claim element that Power Integrations argues is “missing” from the Ludikhuize article is the extension of the extended drain to surface adjoining “positions.” [Br. at p. 34] Simply, every element of claim 1 was present in Ludikhuize except for the ‘s’ in positions. The admitted presence of every element of the invention except for a minor aspect of a single claim element most certainly renders Ludikhuize

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highly material. A “reasonable examiner” would have found the article important in deciding whether to allow the ‘075 Patent. *See Digital Control, Inc. v. Charles Machine Works*, 437 F.3d 1309, 1316 (Fed. Cir. 2006) (materiality assessed under “reasonable examiner” standard).

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The Examiner

compared the prior art and ‘075 structures and rejected claims because they did not “structurally distinguish” over the cited prior art. [PX8 at PIF00035 (emphasis in original; observing that “mere labels” did not “structurally distinguish” over the prior art). In any event, Power Integrations’ argument is disingenuous at best given that its own expert accused Fairchild’s DMOS devices of infringing the ‘075 Patent and testified that “DMOS is very close to bipolar.”³ [10/3/06 Shields Trial Tr. 417:23-418:20] Thus, the Ludikhuizen structure was certainly material. *See KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1740 (2007) (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person’s skill.”)

Power Integrations also argues that the P-TOP and claimed “extended drain” were purportedly so “conventional” that the Examiner already knew of them and disclosing them “would not have changed the examiner’s evaluation of Dr. Eklund’s claims.” [Br. at p. 32] This type of assumption, which is entirely lacking in support, has routinely been rejected. *See e.g.*

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³ Moreover, as was clearly testified by Dr. Gwozdz, and selectively ignored by Power Integrations in its brief, bipolar and CMOS structures can certainly be combined. [9/19/07 Gwozdz Trial Transcript 563:22-565:11]

Cargill, Inc., 476 F.3d at 1367 (“[c]lose cases should be resolved by disclosure, not unilaterally by the applicant;” “applicants [should] continue to submit information for consideration by the Office in applications rather than making and relying on their own determinations of materiality”). There is absolutely *no evidence* that the Examiner was aware that the claimed P-TOP and extended drain elements were known in the prior art, both alone and in combination.⁴ In any event, given that Dr. Eklund was applying for a patent on the combination of two elements, he most certainly was under an obligation to disclose all similar “combinations” of those same two components, regardless of whether they were individually “conventional.”

Finally, Power Integrations argues that all of the withheld prior art was purportedly disclosed in the two-paragraph background section of the patent specification. This argument is false. The cursory “Description of the Prior Art” states in its entirety:

2. Description of the Prior Art

Self isolation technology is used for making high voltage MOS devices, particularly integrated high voltage devices in combination with low voltage control logic on the same chip. The voltage is sustained by an offset gate, as a lightly doped extended drain region is used. Such devices can be considered as an IGFET or MOSFET in series with a single sided JFET. Two of such high voltage devices having opposite conductivity types can be used as a complementary pair on the same chip, with the device having an extended p-type drain being imbedded in an n-well in a p-substrate.

The voltage capability of such high voltage devices is determined by the doping of the substrate, the length of the extended drain region and the net number of charges therein. For optimum performance, the net number of charges should be around $1 \times 10^{12} / \text{cm}^2$. Such devices have been used for making display drivers in the one hundred to two hundred volt range, but the current capabilities of the devices are poor. The main advantage is that low voltage control logic easily can be combined on the same chip. For these devices, a general figure of merit can be determined by the product of $R_{\text{on}} \times A$ (where R_{on} is the on-resistance in the linear region and A is the area taken up by the device). For an n-channel device in the voltage range of two hundred fifty to three hundred volts, $R_{\text{on}} \times A$ is typically $10\text{-}15 \, \Omega \, \text{mm}^2$. A discrete vertical D-MOS device in the same voltage range has a figure of merit of $3 \, \Omega \, \text{mm}^2$, but is much more difficult to combine with low voltage control logic on the same chip. Thus, the application of these high voltage devices is restricted to current level below 100 mA, such as display drivers. Even such drivers are more costly due to poor area efficiency of the high voltage devices. [PX4 at 1:15-50]

This description of the prior art *does not mention or disclose* (1) any P-TOP structure; (2)

⁴ Nor is there any evidence that this was Dr. Eklund’s rationale for withholding prior art from the Examiner. To the contrary, at the time Dr. Eklund considered the Ludikhuijze device to be “an interesting approach.” [FF111]

the Ludikhuize reference, (3) any structure combining a P-TOP with an extended drain, or (4) the fact that the prior art Ludikhuize device combined both the claimed P-TOP structure and an extended drain structure, and expressly used those same terms. Plainly, no examiner reading this language would know how similar Ludikhuize was to the claimed “invention” of Claim 1.

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Instead, this section

concealed the true details of the prior art known to Dr. Eklund. Dr. Eklund should not now be permitted to rely on the success of his own misleading statements to avoid a finding of inequitable conduct.⁶

B. Dr. Eklund’s Deceptive Intent Is Proven By Clear And Convincing Evidence

The evidence of Dr. Eklund’s intent to mislead the Patent Office is clear and convincing. Dr. Eklund overcame the Examiner’s rejection of his claimed invention based on Colak by arguing that the p-layer in that prior art “is not surface adjoining as defined in [the claim].” [PX8 at PIF00056 (emphasis in original)] Yet, at the same time he withheld the Ludikhuize article, which contained a “surface adjoining” P-TOP and actually used the same naming convention. *In statements to the Examiner, Dr. Eklund distinguished over the Colak prior art by arguing that Colak lacked a surface-adjoining P-TOP, while withholding the Ludikhuize article showing that same element. These statements were affirmative misstatements supporting intent to*

⁵ Power Integrations improperly attempts to rely on a question posed to Fairchild’s expert Dr. Gwozdz at the invalidity trial. Dr. Gwozdz merely agreed with the assertion by Power Integrations’ counsel that the background section “described some typical prior art transistors that had an extended drain or drift region” and which were “like Wakaumi.” [542:13-21 (9/18/07)] But, the general statement that extended drains had been used does not change the fact that Dr. Eklund withheld multiple articles disclosing the precisely the *claimed* extended drain region and the claimed P-TOP structure, alone and in combination. The “Background” discussion in the ‘075 Patent concealed the fact that the *claimed* P-TOP and extended drain structures, emphasized during prosecution, were known in the art.

⁶ Power Integrations repeatedly refers to Mr. Beasom’s prosecution of his own patent. [Br. at p. 31] This is irrelevant and a blatant attempt to shift the focus from Dr. Eklund’s inequitable conduct. The only pertinent issues here are Dr. Eklund’s knowledge and intent, his deceptive interactions with the Examiner, and the materiality of the prior art that he withheld during prosecution of the ‘075 Patent. In any event, Mr. Beasom disclosed much prior art during prosecution of his own patents and there is no evidence that Mr. Beasom had specific analysis of the particular prior art references at issue during prosecution, such as Dr. Eklund’s prior art memo.

deceive the Patent Office. See *Cargill, Inc.*, 476 F.3d at 1366 (“intent may be inferred where a patent applicant knew, or should have known, that withheld information would be material to the PTO’s consideration of the patent application.”)

Dr. Eklund’s intent to deceive is further demonstrated by his strategy of (i) withholding *all* prior art references from the Examiner – a pattern of repeated conduct, (ii) concealing important details of those prior art references, which he admits he was indisputably aware of, and (iii) failing to disclose them in his background description in the patent itself.

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Dr. Eklund has offered no plausible explanation for withholding the Ludikhuize article and the eleven other material prior art references in his possession. In fact, neither Dr. Eklund nor Power Integrations has ever provided *any* good faith explanation for his withholding of the Ludikhuize reference. Lacking a plausible good faith explanation, Dr. Eklund’s failure to disclose this prior art supports but one conclusion. Dr. Eklund intended to deceive the Examiner, and successfully did so, by arguing around much less relevant prior art references based on features that he knew existed in the prior art he had in his possession. Dr. Eklund committed inequitable conduct and the ‘075 Patent should be found unenforceable.

III. **POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE ‘851 PATENT.**

Fairchild detailed evidence that Power Integrations committed inequitable conduct by misleading the Examiner and withholding material prior art during the prosecution of the ‘851 Patent.⁷ Power Integrations’ Answering Brief does not dispute these basic facts:

⁷ Claims of the ‘851 Patent require a “soft start circuit”. Thus, the ‘851 Patent is also unenforceable for the reasons set forth below relating to the ‘366 Patent.

- (i) The Examiner allowed claim 1 because the Examiner believed that “the prior Art of record does not appear to disclose or suggest a PWM switch comprising an oscillator for generating a maximum duty cycle signal and a signal [sic] with a frequency range dependant on a frequency variation circuit”;
- (ii) The Examiner initially rejected claim 29 (which issued as claim 11) because the admitted prior art shown in Figure 1 taught every claim element – including “a frequency variation circuit that provides a frequency variation signal”;
- (iii) To overcome this rejection, Power Integrations amended claim 29, added the oscillator generating a maximum duty cycle signal and an oscillation signal limitations that the Examiner believed were missing from the prior art, and affirmatively represented that the prior art “fails to disclose, teach or suggest such limitations”;
- (iv) Power Integrations never disclosed the SMP211 datasheet or schematic; and,
- (iv) After Power Integrations’ amendment and representations, the Examiner allowed the claim.

Consequently, the two, related issues are simple – were Power Integrations’ affirmative representations to the Examiner false and/or did Power Integrations intentionally withhold its material SMP211 prior art? While either misdeed constitutes inequitable conduct rendering the ‘851 Patent unenforceable, the evidence proves that both occurred.

A. Power Integrations Made A Material Misrepresentation and Withheld Material Prior Art.

To convince the Examiner to allow its amended claim, Power Integrations represented that “such limitations” (plural) as “[i] an oscillator that provides a maximum duty cycle signal and [ii] an oscillation signal having a frequency range that is varied according to a frequency variation signal” were missing from the prior art. [FF442].

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Thus, there is no dispute that the first half of Power Integrations’ affirmative representation to the Examiner was false.

Power Integrations would never have been able to make this admittedly false statement to the Examiner had Power Integrations disclosed the actual details of its prior art SMP211 product as required during the prosecution of the ‘851 Patent.

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The second half of Power Integrations' affirmative representation – namely, that the prior art does not disclose, teach or suggest “an oscillation signal having a frequency range that is varied according to a frequency variation signal” – is also false. The specification of the '851 Patent confirms that the SMP211, when used in the circuit shown in Prior Art Figure 1 of the '851 Patent, generates “an oscillation signal having a frequency range that is varied according to a frequency variation signal”:

The jitter current 135 is used to vary the frequency of the saw-toothed waveform generated by the oscillator contained in the pulse width modulated switch 90.... Varying the frequency of operation of the pulse width modulated switch by varying the oscillation frequency of the oscillator is referred to as frequency jitter.

[FF455-456]. This is necessarily true because, as the Examiner found and Power Integrations never disputed, Prior Art Figure 1 teaches a prior art frequency variation circuit that generates a frequency variation signal. [FF435].

Since both parts of Power Integrations' affirmative representation to the Examiner were false, the statement as a whole is, by definition, also untrue.

1. **The withheld prior art was not cumulative.**

Unable to prove that its statement was true, Power Integrations defends its decision to withhold all information about its prior art SMP211 by arguing that it is “cumulative” of other art before the Examiner. Power Integrations' arguments are contradicted by the evidence.

First, when finally presented with information about the SMP211 during its reexamination of the '851 Patent, the Patent Office directly rejected Power Integrations' argument and specifically determined that the SMP211 “cannot be judged as merely cumulative.” [DX601, p. 8]. Power Integrations reliance on *Lummus Industries* is misplaced. There, the Federal Circuit did not upset the determination that prior art relied upon during a reexamination was at least “moderately material”. *Lummus Industries, Inc. v. D.M. & E. Corp.*, 862 F.2d 267, 273 (Fed. Cir. 1988). This is a necessary conclusion since whether a prior art reference is “material” (for purposes of inequitable conduct) or presents a “substantial new question of patentability” (for purposes of reexamination) boils down to the exact same

question – whether a reasonable examiner would have considered it relevant to the patent’s prosecution or merely cumulative of art already considered. During reexamination, the Patent Office unambiguously agreed that the SMP211 is material to the patentability of the ‘851 Patent when it determined that the SMP211 presented a substantially new question of patentability warranting reexamination. [DX601].

Power Integrations presents absolutely no proof that the SMP211 is cumulative of any reference before the Patent Office. Instead, Power Integrations relies entirely on attorney argument. This unsupported opinion is directly contradicted by the evidence, including Dr. Horowitz’s testimony that the SMP211 is noncumulative:

Q. Dr. Horowitz, what is your opinion about whether Power Integrations should have disclosed the SMP211 datasheets, schematics or information during the prosecution of the ‘851 patent?

A. They certainly should have provided it for the following reasons: First of all, that the legend in Figure 1 contains that object, this number 90 PWM switch about which no further information was given to the examiner.

Secondly to that, the information in that datasheet would have been relevant to the patent examiner’s evident misunderstanding of what was shown in block 90.

Third, the evidence in the SMP211 datasheet contradicts the applicant’s own assertion that Figure 1 does not contain the oscillator elements required, namely D Max and frequency variation.

And finally, that the 211 is not cumulative, it’s different art and quite relevant to the patent.

[9/24/07 Horowitz Tr. 138:1-139:3].

Finally, were Power Integrations correct that the SMP211 is cumulative of other prior art that also disclose the “missing” oscillator element, this would compound – not excuse – Power Integrations’ inequitable conduct. In addition to withholding the SMP211, Power Integrations affirmatively represented that none of the prior art disclosed either (i) “an oscillator that provides a maximum duty cycle signal” or (ii) “an oscillation signal having a frequency range that is varied according to a frequency variation signal.” Assuming, *arguendo*, that Power Integrations is correct and there was additional prior art before the Examiner that taught these elements, this simply makes Power Integrations’ affirmative misrepresentation more egregious.

2. **Power Integrations' litigation arguments are irrelevant.**

Unable to dispute the relevant facts, Power Integrations seeks to confuse matters by raising a number of arguments that are either factually incorrect, legally wrong, or both.

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Power Integrations' argument, however, is directly contradicted by the Examiner's express statement (undisputed by Power Integrations) that Prior Art Figure 1 teaches every claim element other than claimed oscillator:

Applicants' Prior Art Fig. 1 shows a first terminal 95, a second terminal Com, a switch/drive circuit 90 and a frequency variation circuit 140 as recited in claim 29.

[FF435]. Consequently, **the only element potentially missing from the prior art was the oscillator shown in the SMP211.** Thus, when, as shown in Prior Art Figure 1, the SMP211 is used in that prior art circuit, "*the combination*" meets every element of claim 29 (now claim 11) of Power Integrations' '851 Patent.

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While it is true that

original claim 29 was rejected as indefinite, this rejection was expressly based on the drive circuit element, not any of the elements at issue now:

In claim 29, the phrase "that provides a drive signal for a maximum time period of a time duration signal" is not understood. If the drive signal were applied for the maximum period of the duration, the drive signal would always be applied.

['851 Pros. Hist., FCS0000438]. This additional rejection simply has no bearing on the fact that (i) the Examiner determined that Prior Art Figure 1 taught every element of claim 29 and (ii) Power Integrations affirmatively represented that the prior art did not "disclose, teach, or suggest" the oscillator limitations added to the amended claim.

B. **Power Integrations' Inequitable Conduct Was Intentional.**

It its Opening Post-Trial Brief, Fairchild provided clear evidence that Power Integrations

intentionally misled the Examiner and withheld material prior art. To rebut a finding of intent, Power Integrations relies upon the testimony of its CEO – Balu Balakrishnan. Such conclusory denials are not sufficient to preclude inequitable conduct. *See Ferring B.V. v. Barr Laboratories, Inc.*, 437 F.3d 1181, 1191 (Fed. Cir. 2006) (“Conclusory allegations and attorney arguments are insufficient to overcome a motion for summary judgment,” let alone trial on the issue).

When materiality of information is a close-call, the Federal Circuit has held that “a patent applicant should err on the side of disclosure.” *Flex-Rest, LLC v. Steelcase, Inc.*, 455 F.3d 1351 (Fed. Cir. 2006); *see also Critikon, Inc. v. Becton Dickinson Vascular Access, Inc.*, 120 F.3d 1253, 1257 (Fed. Cir. 1997) (“It is axiomatic that ‘[c]lose cases should be resolved by disclosure, not unilaterally by the applicant.’”) (internal citation omitted). To hold otherwise would encourage an applicant to withhold information and deny the Examiner an opportunity to evaluate the prior art.

As the Federal Circuit has noted, “intent need not, and rarely can, be proven by direct evidence. *Merck*, 873 F.2d at 1422. Instead, intent to deceive the Patent Office is most commonly “inferred from the facts and circumstances surrounding the applicant’s overall conduct.” *Impax*, 468 F.3d at 1375.

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Mr. Balakrishnan was well aware of the SMP211 during the prosecution of the ‘851 Patent since his company was selling it.

Mr. Balakrishnan was also aware of his duty to disclose relevant prior art. [FF493-520].

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Moreover, Mr. Balakrishnan admitted that he understood that his duty to provide prior art continued throughout the prosecution of the ‘851 Patent. [FF509-513] Again, to meet this

obligation,

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C. **The ‘851 Patent Is Unenforceable Due to Power Integrations Inequitable Conduct.**

To determine whether a patentee committed inequitable conduct, a court balances the levels of materiality and intent to see whether equity warrants a conclusion of inequitable conduct, “with a greater showing of one factor allowing a lesser showing of the other.” *Digital Control*, 437 F.3d at 1313. “The more material the omission, the less evidence of intent will be required in order to find that inequitable conduct has occurred.” *Baxter Int’l, Inc. v. McGaw, Inc.*, 149 F.3d 1321, 1327 (Fed. Cir. 1998).

Power Integrations deliberate, affirmative misrepresentations are highly material. *See Hoffman-La-Roche v. Promega Corp.*, 323 F.3d 1354, 1367 (Fed. Cir. 2003) (“affirmative misrepresentations by the patentee, in contrast to misleading omissions, are more likely to be regarded as material.”). Power Integrations’ prior art SMP211 (which contradicted these representations and disclosed the one element that the Examiner said was missing from the prior art) is also highly material. 37 C.F.R. § 1.56. This materiality is confirmed by the Patent Office in its decision to reexamine the ‘851 Patent once it became aware of this prior art. [DX601].

Because Power Integrations made affirmative misrepresentations during the prosecution of the ‘851 Patent and intentionally withheld material prior art, all claims of the ‘851 Patent are

unenforceable. *See Kingsdown Medical Consultant, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 874 (Fed. Cir. 1988) (en banc).

IV. **POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE '366 PATENT.**

Power Integrations does not dispute the key elements that constitute inequitable conduct:

- (i) Leif Lund, an inventor of the '366 patent and the designer of the prior art SMP240/260, knew that Power Integrations prior art SMP240/260 devices had an internal soft start circuit;
- (ii) During his deposition, Mr. Lund testified that his prior art SMP240/260 met every element of claim 1 of the '366 Patent;
- (ii) Power Integrations prior art SMP3, which was designed in part by Balu Balakrishnan, an inventor of the later '366, was described in a published article as incorporating an internal soft start circuit; but,
- (iii) Power Integrations failed to provide the Examiner with any information about its prior art SMP240/260 or SMP3 devices – or, indeed, any prior art with an internal soft start circuit.

Since Power Integrations intentionally withheld material prior art that its inventors knew met every element of claims of the '366 Patent, that patent is unenforceable.⁸

A. **Power Integrations Withheld Material Prior Art During the Prosecution of the '366 Patent.**

During prosecution of the '366 Patent, Power Integrations dumped 70 references on the Examiner. None of these prior art references were material enough to warrant any comment and the Examiner allowed the claims in the first office action. At the same time, Power Integrations withheld all information about its own prior art devices, which (unlike the disclosed references) contained internal soft start circuits. Since these earlier devices included the soft start features Power Integrations sought to patent in the '366 Patent, they were highly material, and clearly understood by Power Integrations to be relevant.

1. **Power Integrations' prior art SMP240/260 are highly material.**

Power Integrations does not dispute that its SMP240 and SMP260 are prior art devices designed by Leif Lund, an inventor on Power Integrations' later '366 Patent. During his

⁸ The '366 Patent is a divisional of the '851 Patent and, thus, is also unenforceable due to Power Integrations' inequitable conduct during that application.

deposition,

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Tellingly, Power Integrations has never submitted testimony or a declaration from Mr. Lund indicating that his deposition testimony was incorrect. Instead, in its Answering Brief Power Integrations' attorneys contend that Mr. Lund's sworn testimony is unreliable. Even were this true (and there is no evidence that it is) it is beside the point – which is that Mr. Lund, an inventor of the '366 Patent, believed that his prior art SMP240/260 devices met every element of claim 1 of the '366 Patent. Since this is clear from Mr. Lund's testimony, he had an obligation to disclose the SMP240/260 to the Examiner. 37 C.F.R. § 1.56.

For instance, Power Integrations' attorneys now argue that, contrary to Mr. Lund's sworn testimony, Mr. Lund's prior art SMP240/260 did not generate a maximum duty cycle signal. [Answer. Br. p. 24]. Mr. Lund's testimony, however, could not have been more clear that he believed this element to be met by his prior art:

Q. Did the oscillator in the SMP240 and 260 devices provide a maximum duty-cycle signal?

A. Yes.

[FF678 (Lund Depo.)]

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Instead, Mr.

Lund confirmed that the SMP240/260 at least “indirectly” provided the claimed maximum duty cycle signal but that he would need to review the device schematics to explain precisely how. [8/15/05 Lund Depo. 38:13-39:7]. Because Power Integrations had failed to produce these schematics prior to Mr. Lund's deposition, the Court compelled Power Integrations to produce Mr. Lund for an additional deposition. D.I. 189. In that deposition, Mr. Lund was provided with the schematics for his earlier SMP240/260 devices, reviewed them, and confirmed that the SMP240/260 utilized a maximum duty cycle.

Q. Referring to Balakrishnan Exhibit 21, the schematics for the SMP240/260, does the internal soft start circuit vary the duty cycle of the high voltage transistor?

A. Yes.

* * *

Q. Does the signal provided by the internal soft start in the SMP240/260... instruct the drive circuit to disable the drive signal during at least a portion of the maximum duty cycle – sorry, portion of the maximum duty cycle?

* * *

A. Yes.

3/2/06 Lund Depo., 204:7-12 and 205:6-206:2.

The materiality of Power Integrations' SMP240/260 devices was also confirmed by the Patent Office when it determined that this prior art presented a substantial new question of patentability warranting reexamination of the claims of the '366 Patent. [DX602].

2. **Power Integrations prior art SMP3 is highly material.**

Like the SMP240/260, Power Integrations' SMP3 is a prior art device, designed by the inventors of the '366 Patent, that includes an internal soft start circuit. [FF734-757].

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Despite Power Integrations' litigation-inspired denials, the contemporaneous, objective evidence shows that the SMP3 incorporated soft start. As described in a leading magazine, "the soft-start circuit [of the SMP3] consists of a current source and an internal capacitor connected to an intermediate stage of the error amplifier." [FF740; DX17]

Given Power Integrations small size at the time, Mr. Balakrishnan and the other applicants for the '366 Patent would have read this article describing the SMP3's internal soft start and been aware of this prior art. Notably, neither Power Integrations nor Mr. Balakrishnan did anything at the time to "correct" the article or suggest that the SMP3 lacked soft start.

B. **Power Integrations Intentionally Withheld Material Prior Art.**

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While Fairchild disputes this, even were it true it would not justify Power Integrations' inequitable conduct.

Mr. Lund and the other inventors had a duty to disclose to the Examiner all prior art that Mr. Lund believed to be material to the patentability of the claims of the '366 Patent. *See* 37 C.F.R. § 1.56. During his deposition, Mr. Lund testified that he believed that the prior art SMP240/260 met every element of claim 1 of the '366 Patent. [FF672, 674-676, 678, 680, and 687]. This is the definition of material prior art and Mr. Lund was obligated to disclose this to the Patent Office. *See* 37 C.F.R. § 1.56.

There is absolutely no evidence that the Patent Office, Mr. Lund, or any of the other applicants considered the "soft start circuit" element as a means-plus-function element during the prosecution of the '366 Patent. [FF716-718]. The fact that the Court later so construed this limitation does not excuse Mr. Lund's failure to disclose prior art that, at the time, he believed met every element of claim 1 of the '366 Patent.

Finally, Power Integrations argues that "directly contrary to Fairchild's argument, Power Integrations did in fact disclose the circuitry of which it was aware at the time that it believed to be material to patentability" in the form of Power Integrations' 526 Patent. [Answer. Br. p. 29]. This statement is flat-out wrong. First, Power Integrations did not "disclose" the '526 Patent to the Examiner. Instead, the Examiner found the '526 Patent, himself, and cited it as prior art to Power Integrations. [FF711] Second, the '526 Patent does not disclose the soft start circuitry from Power Integrations' SMP240/260. [FF709-710]. Instead, it merely included a portion of the summing junction – which, alone, is irrelevant to the '366 Patent. Finally, had Power Integrations truly had any doubts about the materiality of its prior art SMP240/260 devices, those doubts were dispelled when the Examiner cited the less relevant '526 Patent during the prosecution of the '366 Patent. *Cargill, Inc.*, 476 F.3d at 1366 ("An applicant should know information is material when the examiner repeatedly raises an issue to which the information relates."). Power Integrations' continued refusal to disclose any information about its SMP240/260 devices highlights Power Integrations' wrongful intent.

V. **POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE '876 PATENT.**

During the prosecution of the '876 Patent, Power Integrations' inventors withheld critical information from the Patent Office – namely, that their earlier, publicly disclosed invention (the '851 Patent) anticipated claim 11 of the later '876 Patent. Power Integrations does not dispute these key facts:

- (i) On April 4, 1998, Leif Lund (one of the inventors of the '851 and '876 Patents) signed Power Integrations' invention disclosure form indicating that the invention of the '851 Patent had been publicly disclosed earlier in "March 1998";
- (ii) In the '876 invention disclosure form, Mr. Lund and the other inventors described the invention of the earlier '851 Patent as "prior art";
- (iii) The invention of the '851 Patent meets every element of – and, thus, anticipates – claim 11 of the '876 Patent; and,
- (iv) When it filed the application leading to the '876 Patent, Power Integrations intentionally removed the "prior art" label from the figures showing the earlier '851 Patent and claimed that this prior art was part of the invention of the '876 Patent.

Since there is no dispute that the invention of the '851 Patent was material to the later '876 Patent and that the inventors intentionally withheld this information from the Patent Office, Power Integrations committed inequitable conduct rendering the '876 Patent unenforceable.

Power Integrations now argues that its inventors were wrong and that the '851 Patent was not, in fact, prior art to the '876 Patent. Despite Power Integrations' later attorney argument, the contemporaneous and objective evidence proves that the '851 invention was prior art.

It is black letter law that one is not entitled to a patent if "the invention was known or used by others in this country... before the invention thereof by the applicant for patent." 35 U.S.C. § 102(a). There is absolutely no dispute that the earliest possible date of invention for the '876 Patent is May 21, 1998. [FF828]. Therefore, public knowledge relating to the claims of the '876 Patent prior to May 21, 1998 constitutes prior art.

The objective evidence is clear and unambiguous. On August 26, 1997, Power Integrations claims to have conceived of the invention of the '851 Patent. [FF817]. That invention was allegedly disclosed to others within Power Integrations on September 2, 1997 and the "date of first public disclosure" was "March 1998". [FF823]. Thus, Power Integrations'

‘851 Patent is prior art to the later ‘876 Patent. 35 U.S.C. § 102(a). Thereafter, the application leading to the ‘851 Patent was filed on May 18, 1998 – three days before the Power Integrations’ alleged invention of the ‘876 Patent. [FF403]

Unable to dispute this documentary evidence, Power Integrations relies upon self-serving and uncorroborated testimony of its own CEO given during this litigation and a decade after the events in question. Mr. Balakrishnan now contradicts Power Integrations’ own written documents and claims that contrary to his invention disclosure form, Power Integrations may not have publicly disclosed the invention of the ‘851 Patent until some later date. Mr. Balakrishnan does not know what date (and has absolutely no objective evidence to offer) but he is confident that it must be late enough so that the ‘851 Patent does not constitute prior art.

Mr. Balakrishnan’s self-serving testimony is contradicted by all of the evidence. First, Power Integrations’ “Invention Disclosure Form” expressly states that the first public disclosure of the invention of the ‘851 Patent would be in March 1998. [FF823]. While the pre-written form identifies this as an “expected” date of disclosure because such a date is typically to be after the form is completed, this particular invention form was signed by Mr. Djengurian (one of the inventors) on March 25, 1998, by Mr. Balakrishnan on March 26, 1998, and by Mr. Lund (the third inventor) on April 2, 1998 – after the public disclosure had already occurred. [FF401]. For Mr. Balakrishnan’s current testimony to be believed, Mr. Lund would have had to have deliberately lied on Power Integrations’ invention disclosure form. There is absolutely no evidence that this occurred and no possible motivation for Mr. Lund to have done so.

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Unable to provide objective evidence that the ‘851 invention was not prior art to the ‘876

Patent, Power Integrations relies upon attorney argument to suggest that the applicants simply did not understand what “prior art” was when they admitted in three separate places that the ‘851 invention was prior art. This is directly contradicted by Mr. Balakrishnan.

Mr. Balakrishnan is an inventor on numerous patents and testified that, as of 1998, he was “generally familiar with the process of applying for a patent.” [9/21/07 Balakrishnan Tr. 54:18-21].

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The evidence is overwhelming that Mr. Balakrishnan and the other inventors were clearly aware – and chose to conceal from the Patent Office – that the ‘851 invention was prior art to the later ‘876 Patent. Since the same three individuals that invented the ‘851 Patent “invented” the ‘876 Patent less than a year later, they were clearly aware of their earlier work. All three confirmed in writing that the ‘851 invention was prior art to the ‘876 Patent in the ‘876 Invention Disclosure Form. That form included “Figure 1. Frequency Jittering Prior Art” that described the ‘851 invention.

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Power Integrations’ calculated efforts to withhold from the Examiner the fact that Power Integrations’ ‘851 invention was prior art to the later ‘876 Patent confirms that this inequitable conduct was intentional. Thus, the ‘876 Patent is unenforceable.

VI. CONCLUSION.

For the foregoing reasons, Fairchild respectfully requests that the Court hold the ‘075, ‘851, ‘366 and ‘876 Patents unenforceable.

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